

REMARKS

Claims 1, 4, 6, 7, 9-12 and 16-21 are pending, with claims 16-21 drawn to a nonelected invention and withdrawn from consideration. By this Amendment, no claims are cancelled, claims 1, 11 and 12 are amended and no new claims are added.

**Claim rejections – 35 U.S.C. §102(b)**

The June 10, 2010 Office Action rejected claims 1, 4, 6, 11 and 12 under 35 U.S.C. 102(b) as being anticipated by the 2000 Doctoral Thesis of Rejane Pratelli entitled “Identification et caractérisation de canaux potassiques chez la vigne vers une amelioration de la blanca acido-bisique de la vendange” (Pratelli Thesis). Applicants have amended independent claim 1, 11 and 12 to more clearly define the present invention and respectfully traverse the rejection.

Independent claim 1 has been amended to clarify that the size of the storage organs and the quantity of tartrate accumulated in the storage organs at the fructification stage are increased. Independent claims 11 and 12 have also been amended to clarify that the size of the storage organs is increased with the aim of the gene encoding the outward potassium channel encoded by SEQ ID NO: 1. While the Pratelli Thesis reveals the nucleotide sequence of SEQ ID NO. 1, the Pratelli Thesis does not disclose, teach or suggest the effect of SEQ ID NO. 1 on the characteristics of a transformed plant’s berries. Instead, the Pratelli Thesis only describes a reduced growth phenotype in the micro-cuttings, with the main findings revealed in the Pratelli Thesis including:

- (1) The cloning of two types of potassium channels from grapevines, the two cloned channels being from different families;

- (2) A study of the expression pattern of these channels from the vines (the VvSOR channel being expressed in various organs, including the grape berries); and
- (3) The obtaining of transformed vines, from both the VvSOR gene from the cloned SEQ ID NO. 1 and the cloned gene mutated in a GYGD protein motif (which produces nonfunctional channels).

The objective was to observe whether there is a difference in phenotype to confirm the role of VvSOR *in vivo*, and the observation was limited to the vegetative juvenile state of the transformants (microcutting). A delay in the mutant's growth was observed, particularly in low-potassium medium (page 126), along with a foliar phenotype with disrupted growth for the unmutated VvSOR gene. As a result, the Pratelli Thesis does not reveal any findings concerning an effect of the expression of VvSOR at the fructification stage. Also, the Pratelli Thesis does not demonstrate that one of the vine's potassium channels, such as VvSOR, allows the acid-base balance to be manipulated. As a result, the Pratelli Thesis fails to teach all the claim limitations of independent claims 1, 11 and 12. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

#### **Claim rejections – 35 U.S.C. §103**

The June 10, 2010 Office Action rejected claims 7, 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over the Pratelli Thesis in view of Pratelli 2002. Applicants respectfully traverse the rejection as a *prima facie* case of obviousness has not been established.

The Office Action admits that the Pratelli Thesis fails to teach measuring expression of the gene encoding an outward potassium channel encoded by SEQ ID NO. 1 by measuring a quantity of mRNA derived from a transcription of the gene during the development of the

storage organ. (Office Action, p. 5.) Indeed, the Pratelli Thesis gives no indication concerning the effect of VvSOR on the characteristics of the berries. The Examiner errors in finding that Pratelli 2002 cures that deficiency.

Pratelli 2002 reports about the molecular characterization of a grape SIRC inward potassium channel, expressed transiently in berries, preferentially in guard cells, and suggests a role in regulating stomatal aperture and berry transpiration or potassium transport and potassium loading into the berries. Pratelli 2002 does not teach, disclose or suggest any role of an outward potassium channel in the berry.

Accordingly, the cited references, considered in combination or solely, fail to teach, disclose or suggest all the claim limitations of independent claim 7 and a *prima facie* case of obviousness has not been established. Reconsideration and withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



Brian L. Stender  
Registration No. 56836

Customer No. 24113  
Patterson Thuente Christensen Pedersen, P.A.  
4800 IDS Center  
80 South 8th Street  
Minneapolis, Minnesota 55402-2100  
Telephone: 612.252.1548